WAY TO SUCCESS

Leads to Success

10th Standard

Science

Half Yearly Exam 2022

Various District

Question Paper Collection

HMD

Half Yearly Examination - 2022

10 - Std Karur **SCIENCE** 1041

Time : 3.00 Hrs. Marks : 75

Note : i) Answer all the questions. 12 X 1 = 12

ii) Choose the most appropriate answer from the given four alternatives and write the option code and the corresponding answer.

1. To project the rockets which of the following principle(s) is/(are) required?
   a) Newton's third law of motion b) Newton's law of gravitation
   c) Law of conservation of linear momentum d) both a and c
2. The eye defect `Presbyopia' can be corrected by
   a) convex lens b) concave lens c) convex mirror d) Bifocal lenses
3. Kilowatt hour is the unit of
   a) resistivity b) conductivity c) electrical energy d) electrical power
4. ..... isotope is used for treatment of cancer.
   a) Radio Iodine b) Radio Cobalt c) Radio Carbon d) Radio Nickel
5. 1 mole of any substance contains ..... molecules.
   a) 6.023×10^{23} b) 6.023×10^{-23} c) 3.0115×10^{23} d) 12.046×10^{23}
6. A 25% alcohol solution means
   a) 25ml alcohol in 100ml of water b) 25ml alcohol in 25 ml of water
   c) Copper sulphate in water d) Sulphur in carbon - di - sulphide
7. The IUPAC name of an organic compound is 3 Methyl butane 1-ol. What type compound it is?
   a) Aldehyde b) Carboxylic acid c) Ketone d) Alcohol
8. Which is formed during anaerobic respiration?
   a) Carbohydrate b) Ethyl alcohol c) Acetyl COA d) Pyruvate
9. The wall of human heart is made of
   a) Endocardium b) Epicardium c) Myocardium d) All of the above
10. The hormone which has positive effect on apical dominance is
    a) Cytokinin b) Auxin c) Gibberellin d) Ethylene
11. In humans a male and a female gamete fuse and from of zygote. The condition of zygote is
    a) haploid b) diploid c) triploid d) tetraploid
12. Polyphagia is a condition seen in
    a) Obesity b) Diabetes mellitus c) Diabetes insipidus d) AIDS

Note : Answer any seven questions. Question No. 22 is compulsory.

13. What are the causes of `Myopia'? 7 X 2 = 14
14. State whether the following statement are true or false, if false explain. Why? a) According to Charle's law, at constant pressure the temperature is inversely proportional to volume.
    b) The SI unit for electric current is the Coulomb.

15. Explain why the ceilings of concert halls are curved?
16. What is rust? Give the equation for formation of rust?
17. A solution was prepared by dissolving of 25g of sugar in 100g of water. Calculate the mass percentage of solute?
18. Write any two characteristics of chemical equilibrium.
19. Why are the rings of cartilages found in trachea of rabbit.
20. What is bolting? How was it induced artificially?
21. Expand the following abbreviations. a) IDDM b) CHD.
22. What is the aim of crop improvement?

Note : Answer any seven questions. 7 X 4 = 28
Question No. 32 is compulsory.

23. a) What is refractive index? b) Why are traffic signals red in colour?
24. Define electric potential and potential difference.
25. **Match the following.**

Column A		Column B
1) Infrasonic	-	a) Compressions
2) Echo	-	b) 22KHZ
3) Ultrasonic	-	c) 10 HZ
4) High pressure region	-	d) Ultra sonography

26. a) Define : Relative atomic mass. b) Define : Atomicity.
27. In what way hygroscopic substances differ from deliquestcent substances.
28. a) What is photosynthesis and where in a cell does it occur?
    b) Write the reaction for photosynthesis.
29. a) What is the importance of values in the heart?
    b) Why is sinoatrial node called the Pace maker of heart?
30. a) What is pollination?
    b) State the important of pollination.
31. a) Why is Archaeopteryx considered to be a connecting link?
    b) How can you determine the age of the Fossils?
32. What precautions can be taken for preventing heart disease?

Note : Answer all the questions. 3 X 7 = 21

33. a) i) Define inertia, give its classification. ii) Differentiate mass and weight.
    (OR) b) i) Who discovered natural radio activity?
    ii) In Japan, some of the new born children are having congenital diseases. Why?
    iii) Give any two uses of radio isotopes in the field of Agriculture?
34. i) Give the salient features of "Modern atomic theory" ***(OR)***
    ii) How ethanol manufactured sugarcane.
35. a) i) Enumerate the function of blood. ii) Guard cells are responsible for opening and closing of stomata. Give reason for this statement. ***(OR)***
    b) i) What are the agents of soil erosion?
    ii) Solar energy is renewable energy. How?
    iii) What is the importance of rain water harvesting?

HMD 10 – ஆம் வகுப்பு அறிவியல் (EM) பக்கம் – 2

Thriupur

HALF YEARLY EXAMINATION - 2022

STD - X

SCIENCE

TIME : 3.00 Hrs

MARKS : 75

PART - I

I. **Choose the correct answers :** 12 x 1 = 12

1. The mass of a body is measured on planet Earth as M kg. When it is taken to a planet of radius half that of the Earth then value will be ..... kg a) $4M$ b) $2M$ c) $M/4$ d) M
2. One unit of electric energy is equal to
   a) 1000 watt hour b) 100 watt hour c) 10 watt hour d) all the above
3. ..... aprons are used to protect us from gamma radiation
   a) Lead oxide b) Iron c) Lead d) Aluminium
4. Which of the following represents I amu?
   a) Mass of a C-12 atom b) Mass of a hydrogen atom
   c) 1/12th of the mass of a c-12 atom d) Mass of 0-16 atom
5. ..... is an important metal to form amalgam a) Ag b) Hg c) Mg d) Al
6. Which of the following are used as ananethetics?
   a) Carboxylic acids b) Ethers c) Esters d) Aldehydes
7. Carparian strips are present in the ..... of the root.
   a) Cortese b) pith c) pericycle d) endodermis
8. A patient with blood group `O' was injured in an accident and has blood loss. Which group of blood should be used by doctor for transfusion?
   a) `O' group b) `AB' group c) `A' or `B' group d) All blood group
9. The hormone which has positive effect on opical dominance is
   a) Cytokinin b) Auxin c) Gibberellin d) Ethylene
10. Which method of crop improvement can be practised by a farmer if he is inexperienced?
    a) clonal selection b) mass selection c) pureline selection d) hybridization
11. An inexhaustible resources is / are
    a) wind power b) soil fertility c) wild life d) all the above
12. All files are stored in the ..... a) folder b) box c) paint d) scanner

PART - II

II. **Answer any seven questions. Q.No.22 is compulsory** 7 x 2 = 14

13. State Rayleigh's saw of scattering.
14. What is the role of the earth wire in domestic circuits?
15. Match the following :

a) Infrasonic	-	compressions
b) Echo	-	22 KHz
c) ultrasonic	-	10 Hz
d) High pressure region	-	Ultrasonography

16. Writes the alloys of stainless steel and its uses?
17. Match the following :

a) Nissil's granules	-	Forebrain
b) Hypothalamus	-	Peripheral nervous system
c) Cerebellum	-	Cyton
d) Schwann cell	-	Hind brain

18. Draw and label the structure of a pollen grain.
19. How does insulin deficiency occur?
20. Fill in the blanks :
    a) Chipho movement is initiated against .....
    b) The blood sucking habit of leech is know as .....
21. Why fossil fuels are to be converted?
22. The hydroxyl ion concentration of a solution is 1×10^{-9}M. What is the pOH of the solution?

PART - III

Answer any seven questions. Q.No.32 is compulsory **7 x 4 = 28**

23. Distinguish between linear, arial and super ficial expansion.
24. a) Define one roentgen
    b) Compare any two properties of alpho beta and gamma radiation.
25. Write applications of Avogadra's law?
26. a) Define Hydrated salt
    b) What happens when $MgSo_4.7H_2O$ is heated? Write the appropriate equation?
27. What is called homologous series? Give any three of its characteristic?
28. Name the three basic tissues systems in flowering plants.
29. Differentiate between systole and Diassole. Explain the conduction of heart beat.
30. How a cancer cell differ from a normal cell?
31. What do you understand by the term phenotype and genotype?
32. The ratio of mass of two planets is 2:3 and the ratio of their radil is 4 : 7. Find the ratio of their accelerations due to gravity.

PART - IV

Answer all the questions. Draw diagram whereever necessary **3 x 7 = 21**

33. a) State joule's law of heating?
    b) An alloy of nickel and chromium is used as the heating element. Why?
    c) How does a fuse wire protect electrical appliances? **(OR)**
    a) Compare between Natural and Artificial Radioactivity?
    b) Writes the uses of nuclear reactor?
34. a) Define Relative atomic mass
    b) Give the salient features of "Modern atomic theory" **(OR)**
    a) How does pH play an important role in everyday life?
    b) A solid compound 'A' decomposes on heating into 'B' and a gas 'C', on passing the gas 'C' through water, it becomes acidic. Identify A, B and C.
35. a) i) Write the physiological effects of Gibberellin.
    ii) The degenerated wing of a kiwi is an acquired character. Why is it an acquired character? **(OR)**
    b) i) Enumerate the importance of forest
    ii) If one pollen grain produces two male gametes, how many pollen grains are needed to fertilize 10 ovules?

Coimbatore

10

Reg. No. | | | | | | | |

Time : 3.00 hrs.

Half-Yearly Examination - 2022
SCIENCE

Max. Marks : 75

PART - I

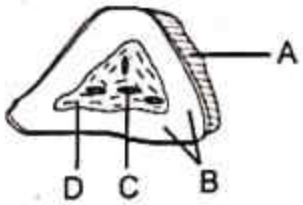
I. Choose the best answer **12 x 1 = 12**

1. The unit of 'g' is ms^{-2} . It can be also expressed as.....
   a) cm s^{-1} b) Nkg^{-1} c) $Nm^2 kg^{-1}$ d) $cm^2 s^{-2}$
2. The frequency which is audible to the human ear is.....
   a) 50 KHz b) 20 KHz c) 15000 KHz d) 10000 KHz
3. .....isotope is used for the treatment of cancer
   a) Radio iodine b) Radio cobalt c) Radio carbon d) Radio nickel
4. 1 mole of any substance contains.....molecules.
   a) 6.023×10^{23} b) 6.023×10^{-23} c) 3.0115×10^{23} d) 12.046×10^{23}
5. Powdered $CaCO_3$ reacts more rapidly than flaky $CaCO_3$ because of.....
   a) large surface area b) high pressure c) high concentration d) high temperature
6. Rectified spirit is an aqueous solution which contains about.....of ethanol.
   a) 95.5% b) 75.5% c) 55.5% d) 45.5%
7. Which is formed during anaerobic respiration.
   a) carbohydrate b) Ethyl alcohol c) Acetyl CoA d) Pyruvate
8. The outer most layer of three cranial meninges is.....
   a) arachnoid membrane b) piamater c) duramater d) myelin sheath
9. Syngamy results in the formation of.....
   a) zoospores b) conidia c) zygote d) chlamydomonas
10. The 'use' and disuse theory was proposed by.....
    a) Charles Darwin b) Ernest Haeckel c) Jean Baptiste Lamarck d) Gregor Mendel
11. Global warming will cause.....
    a) raise in level of oceans b) melting of glaciers c) sinking of islands d) all of these
12. Where you will create category of blocks?
    a) Block palette b) Block menu c) script area d) sprite

PART - II

II. Note : Answer any seven questions. Question No.22 is compulsory. **7 x 2 = 14**

13. State Rayleigh's law of scattering.
14. Give any two uses of radio isotopes in the field of agriculture?
15. A hot saturated solution of copper sulphate forms crystals as it cools why?
16. Differentiate reversible and irreversible reactions?
17. Name the simplest ketone and give its structural formula.
18. How is diastema formed in rabbit?
19. Draw the given picture and label the parts A, B, C, D.



20. What do you understand by the term phenotype and genotype?
21. What are the advantages of using biogas?
22. What will be the frequency of sound having 0.20 m as its wavelength, when it travels with a speed of 331 ms^{-1}?

PART - III

III. Answer any seven of the following. Question No.32 is compulsory. **7 x 4 = 28**

23. a) Define Calorie.
    b) What is co-efficient of real expansion?
24. Write any four uses of LED bulb.
25. a) Name two animals, which can hear ultrasonic vibrations.
    b)State soddy and Fajan's displacement law.
26. a) What are alloys? Give an example.
    b) Give two reasons for alloying?
27. a) Draw and label the structure of oxysomes?
    b) What is respiratory quotient?
28. Enumerate any four functions of blood?
29. a) Write the events involved in the sexual reproduction of a flowering plant.
    b) Mention the advantages of that event.
30. Define Ethnobotany and write its importance?
31. Distinguish between
    a) Somatic gene therapy and germ line gene therapy.
    b) Undifferentiated cells and differentiated cells.
32. The hydroxide ion concentration of a solution is 1×10^{-11} M. What is the pH of the solution?

PART - IV

Note : Answer all questions. Draw diagrams wherever necessary **3 x 7 = 21**

33. Differentiate the eye defects : Myopia and Hypermeteropia.
    (OR)
    Compare the properties of alpha, beta and gamma radiations.
34. i) $N_2 + 3H_2 \rightarrow 2NH_3$ (The atomic mass of nitrogen is 14, and that of hydrogen is 1)
    1 mole of Nitrogen = (.....g) + 3 moles of hydrogen = (.....g) $\rightarrow$ 2 moles of ammonia = (.....g)
    ii) Give any three salient features of modern atomic theory.
    (OR)
    What is called homologous series? Give any three of its characteristics?
35. Illustrate the structure and funtions of brain.
    (OR)
    What is soil erosion? How will you prevent soil erosion?

Ts10S Tenkasi District Common Examinations
Common Half Yearly Examination - December 2022

21.12.2022

Standard 10

SCIENCE

Time: 3.00 Hrs. Marks: 75

PART - I

* **Answer all the questions.** **12×1=12**
* **Choose the most appropriate answer from the given four alternatives.**

1) Newton's III law is applicable
   a) for a body is at rest b) for a body in motion
   c) both a and b d) only for bodies with equal masses
2) Speed of light in air or vacuum is _____.
   a) 330 ms^{-1} b) 3×10^{8} ms^{-1} c) 3.48×10^{7} ms^{-1} d) 348 ms^{-1}
3) Kilowatt hour is the unit of
   a) resistivity b) conductivity
   c) electrical energy d) electrical power
4) Velocity of sound in the atmosphere of a planet is 500 ms^{-1}. The minimum distance between the sources of sound and the obstacle to hear the echo, should be
   a) 17m b) 20m c) 25m d) 50m
5) Artificial radioactivity was disovered by
   a) Bequerel b) Irene Curie c) Roentgen d) Neils Bohr
6) In the nucleus of $_{20}Ca^{40}$, there are
   a) 20 protons and 40 neutrons b) 20 protons and 40 neutrons
7) _____ is a relative peroxidic property.
   a) Atomic radii b) Ionic radii
   c) Electron affinity d) Electro negativity
8) The brain of leech lies above the
   a) Mouth b) Buccal cavity c) Pharynx d) Crop
9) The centromere is found at the centre of the _____ chromosome.
   a) Telocentric b) Metacentric c) Sub-metacentric d) Acrocentric
10) The best way of direct dating fossils of recent origin is by
   a) Radio-carbon method b) Uranium lead method
   c) Potassium - argon method d) Both (a) and (c)
11) Tobacco consumption is known to stimulate secretion of adrenaline. The component causing this could be
   a) Nicotine b) Tannic acid c) Curcumin d) Leptin
12) Which software is used to create animation?
   a) Paint b) PDF c) MS word d) Scratch

PART - II

Note: Answer any seven questions. **7×2=14**
[Question No. 22 is compulsory]

13) 'X' rays should not be taken often give the reason.
14) Explain Esterification reaction.
15) Name three improved characteristics of wheat that helped India to achieve high productivity.
16) What precautions can be taken for preventing heart disease?
17) How are e-wastes generated?
18) Write a short note on editor and its main parts.
19) Name two maize hybrids rich in amino acid lysine.
20) Why does the sky appear in blue colour?
21) What is the importance of valves in the heart?
22) Vinu dissolves 50g of sugar in 250ml of hot water, Sarath dissolves 50g of same sugar in 250 ml of cold water. Who will get faster dissolution of sugar? and why?

PART - III

Note: Answer any seven questions. **7×4=28**
[Question No. 32 is compulsory]

23) **Fill in the blanks:**
1) Position is an _____.
2) 100% pure ethanol is called _____.
3) _____ causes stomatal closure.
4) Blood cancer is called _____.

24) **Analogy type questions:**
1) Chemotherapy : Chemicals
Radiation therapy : _____
2) Hyper tension : Hyper cholesterolomia
Glycosuria : _____
3) Nuclear fusion : Extreme temperature
Nuclear fission : _____
4) Increasing crops : Radio phosphorous
Effective functioning of heart : _____

25) **Match:**

a) Co-60	-	Age of fossil
b) I-131	-	Function of heart
c) Na-24	-	Leukemia
d) C-14	-	Thyroid disease

SIVAKUMAR.M,
Sri Rama Matric Hss
Vallam-627809
Tenkasi District.

26) **State whether True or False, if false write the correct statement:**
1) Cancer causing genes are called oncogenes.
2) AIDS is not transmitted by contact with a patient's clothes.
3) On dipping a pH paper in a solution it turns into yellow, then the solution is basic.
4) Nuclear fusion is more dangerous than nuclear fission.

27) Cell phone towers should be placed far away from the residential area. Why?
28) Enumerate the importance of forest.
29) Differentiate between outbreeding and inbreeding.
30) 1) State Ohm's law.
2) What is the role of the earth wire in domestic circuits?
31) Differentiate between Nuclear fission and Nuclear fusion.
32) Three resistors of resistance 5 ohm (5Ω), 3 ohm (3Ω), and 2 ohm (2Ω) are connected in series with 10V battery. Calculate their effective resistance and the current flowing through the circuit.

PART - IV

Note: Answer all the questions. **3×7=21**

33) A) i) Compare the properties of Alpha, Beta, Gamma radiations.
ii) Which material protects as from radiation?

(OR)

B) i) List any five properties of light.
ii) What is refractive index?

34) A) i) What is homologous series? Give any three of its characteristics.
ii) Name the simplest ketone and give its structural formula.

(OR)

B) i) How is ethanol manufactured from sugarcane?
ii) Give any two uses of ethanol.

35) A) What are the sources of solid waste? How are solid wastes managed?

(OR)

B) i) Changes in life style is a risk factor for occurrence of cardiovascular diseases. Can it be modified? If yes suggest measures for prevention.
ii) How does insulin deficiency occur?

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10 R

Reg. No. | | | | | | | |

Half-Yearly Examination - 2022
SCIENCE

Time : 2.30 hrs. Max. Marks : 75

Thirupur

PART - I

I. Choose the correct answer 5 x 1 = 5

1. The eye defect 'presbyopia' can be corrected by
   a) convex lens b) concave lens c) convex mirror d) bifocal lens
2. SI unit of resistance is.....
   a) mho b) joule c) ohm d) ohm meter
3. .....aprons are used to protect us from gamma radiations.
   a) Lead oxide b) Iron c) Lead d) Aluminium
4. 1 mole of any substance contains.....molecules.
   a) 6.023×10^{23} b) 6.023×10^{-23} c) 3.0115×10^{23} d) 12.046×10^{23}
5. Which of the following is the universal solvent?
   a) Acetone b) Benzene c) Water d) Alcohol
6. Which one of the following is used to cure wound?
   a) Hydrochloric acid b) Hydrogen peroxide c) Ammonium chloride d) All the above
7. .....is ATP factory of the cells.
   a) chloroplast b) cytoplasm c) mitochondria d) nucleus
8. Water which is absorbed by roots is transported to aerial parts of the plant through
   a) cortex b) epidermis c) phloem d) xylem
9. The hormone which has positive effect on apical dominance is
   a) cytokinin b) auxin d) gibberellin d) ethylene
10. The best way of direct dating fossils of recent origin is by
    a) radio carbon method b) uranium lead method c) potassium - argon method d) both (a) and (b)
11. Excessive consumption of alcohol leads to
    a) loss of memory b) cirrhosis of liver c) state of hallucination d) supression of brain function
12. All files are stored in.....
    a) folder b) box c) pai d) scanner

PART - II

II. Answer any 7 of the following. (Question number 22 is compulsory) 7 x 2 = 14

13. Why a spanner with a long handle is preferred to tighten screws in heavy vehicles?
14. State Boyle's law.
15. True or false (If false give the correct statement)
    a) Ionic radius increases across the period from left to right.
    b) In a solution the component which is present in lesser amount is called solvent.
16. Fill in the blanks.
    a) The chemical name of rust is..... b) 100% pure ethonol is called.....
17. Ordinary soap cannot be used in hard water. Why?
18. Match the following.

1. Brain	-	a) pleura
2. Kidney	-	b) capsule
3. Heart	-	c) meninges

4. Lungs - d) Pericardium

19. Draw the label the parts of sperm cell.

20. Name the types of stem cells.
21. What are the advantages of practising exercise in daily life?
22. Three resistors of resistances 5 ohm, 3 ohm, and 2 ohm are connected in series with 10V battery. Calculate their effective resistance and the current flowing through the circuit.

PART - III

III. Answer any 7 of the following. (Question number 32 is compulsory) **7 x 4 = 28**

23. Differentiate convex lens and concave lens.
24. a) What is meant by electric current. b) An alloy of nickel and chromium is used as the heating element. Why?
25. What is a nuclear reactor? List out the essential parts of a nuclear reactor.
26. a) Identify the bond between H and F in HF molecule.
    b) What property forms the basis of identification?
    c) How does the property vary in periods and in groups?
27. Differentiate reversible and irreversible reaction.
28. a) How does leach suck blood from the host?
    b) How does locomotion takes place in leech?
29. a) Name the gaseous plant hormone. Describe its three different actions in plants.
    b) Which hormone is known as stress hormone in plants? Why?
30. a) Define Palaeontology?
    b) Which organism is considered to be the fossil bird? Why is the bird considered to be a connective link?
31. Enumerate the functions of forest.
32. Calculate the number of moles in a) 27 g of Aℓ b) 1.51×10^{23} molecules in $NH_4C\ell$.

PART - IV

Answer all the questions.

33. a) i) State the universal law of gravitation and derive its mathematical expression.
    ii) What are the causes of "Myopia". **(OR)**
    b) i) List the merits of LED.
    ii) Write any three features of Natural and artificial radio activity.
34. a) i) What is rust? Give the equation for formation of rust.
    ii) In what way hygroscopic substances differ from delinquescent substances. **(OR)**
    b) i) List out the factors influencing the rate of a reaction.
    ii) What is called homologous series?
    iii) Give any three of its characteristics.
35. a) i) Name the three basic systems in flowering plants.
    ii) What is transpiration? Give the importance of transpiration. **(OR)**
    b) i) Draw and label the structure of a neuron.
    ii) What precautions can be taken for preventing heart disease?

HTv

HALF YEARLY EXAMINATION - 2022

10 - Std Thiruvannamalai **SCIENCE**

Time : 3.00 hrs. Marks : 75

PART - I

Answer all the questions. **12 X 1 = 12**

1. Impulse is equal to
   a) Rate of change of momentum b) Rate of force and time
   c) Change of momentum d) Rate of change of mass
2. Unit of temperature is
   a) Celsius b) Kelvin
   c) Fahrenheit d) None of the above
3. Gamma radiations are dangerous because
   a) it affects eyes b) it affects tissues
   c) it produces genetic disorder
   d) it produces enormous amount of heat
4. Which of the following is a triatomic molecule?
   a) Glucose b) Helium
   c) Carbon di oxide d) Hydrogen
5. Which of the following is a the universal solvent?
   a) Acetone b) Benzene c) Water d) Alcohol
6. ..... is used as anesthetics.
   a) Carboxylic acids b) Ethers
   c) Esters d) Aldehyde
7. Rectified spirit in an aqueous solution which contains about ..... of ethanol.
   a) 95.5% b) 75.5% c) 55.5% d) 45.5%
8. The coelomic fluid of beech contains ..... .
   a) lymph b) haemoglobin c) cerobro fluid d) spiral fluid
9. Node of Ranvir is found in ..... .
   a) Muscles b) Axons c) Dendrites d) Cyton
10. The plant which propagates with the help of its leaves is ..... .
    a) Onion b) Neem c) Ginger d) Bryophyllum
11. Which type of cancer affects lymph nodes and spleen?
    a) Carcinoma b) Sarcoma c) Leukemia d) Lymphoma
12. Which software is used to create animation?
    a) Paint b) PDF c) MS Word d) Scratch

PART - II

7 X 2 = 14

Answer any seven questions. Question No. 22 is compulsory.

13. State Boyle's law.
14. Why are traffic signals red in colour?

15. **Match the following.**

1) Electric current	-	Volt
2) Potential difference	-	Ohm meter
3) Specific resistance	-	Watt
4) Electrical power	-	Joule
5) Electrical energy	-	Ampere

16. State true or false. (If false give the correct statement)
Sodium Chloride dissolved in water forms a non-aqueous solution.
17. What is rust? Give the equation for formation of rust.
18. Differentiate reversible and irreversible reactions.
19. Write a short note on mesophyll.
20. Why are thyroid hormones referred as personality hormone?
21. What are allosomes?
22. Calculate the gram molecular mass of the Water.

PART - III **7 X 4 = 28**

Answer any seven questions. Question No. 32 is compulsory.

23. Define inertia. Give its classification.
24. Differentiate convex lens and concave lens.
25. List the merits of LED bulb.
26. Write notes on i) Saturated solution and ii) Unsaturated solution
27. Differentiate soaps and detergents.
28. List out the parasitic adaptations in leech.
29. Write a neat labeled diagram of a neuron.
30. How do you differentiate homologous organs from analogous organs?
31. Enumerate the importance of forest.
32. Calculate the pH of 0.001 molar solution of HCl.

PART - IV

Answer all the questions. **3 X 7 = 21**

33. State and prove the law of conservation of linear momentum. ***(OR)***
Differentiate the eye defects : Myopia and Hydpermetropia.
34. How does PH play an important role in every day life? ***(OR)***
How is ethanol manufactured from sugarcane?
35. Where are estrogens produced? What is the role of estrogens in the human body? ***(OR)***
Discuss the importance of biotechnology in the field of medicine.

Class :10 Chennai Register Number

COMMON HALF YEARLY EXAMINATION - 2022 - 23

SCIENCE

Time Allowed : 3.00 Hours] [Max. Marks : 75

PART – 1

Answer all the questions. 12x1=12

1. One kilogram force equals to
   a) 9.8 dyne b) 9.8×10^4 N c) 98×10^4 dyne d) 980 dyne
2. The value of universal gas constant
   a) 3.81 $mol^{-1} k^{-1}$ b) 8.03 $mol^{-1} k^{-1}$ c) 1.38 $mol^{-1} k^{-1}$ d) 8.31 $mol^{-1} k^{-1}$
3. The frequency which is audible to the human ear is
   a) 50 KHz b) 20 KHz c) 15000 KHz d) 10000 KHz
4. Mass of 1 mole of Nitrogen atom is
   a) 28 amu b) 14 amu c) 28 g d) 14 g
5. The number of components in a binary solution is
   a) 2 b) 3 c) 4 d) 5
6. Rectified spirit is an aqueous solution which contains about ------- of ethanol.
   a) 95.5% b) 75.5% c) 55.5% d) 45.5%
7. The body of leech has
   a) 23 segments b) 33 segments c) 38 segments d) 30 segments
8. The outermost of the three cranial meninges is
   a) arachnoid membrane b) piameter
   c) duramater d) myelin sheath
9. Syngamy results in the formation of
   a) zoospores b) conidia c) zygote d) chlamydo spores.
10. The term Ethnobotany was coined by
    a) khorana b) J.W. Harsberger c) Ronald Ross d) Hugo de vries
11. Where does alcohol effect immediately after drinking?
    a) eyes b) Auditory region c) liver d) central nervous system
12. All files are stored in the
    a) Folder b) box c) paint d) scanner

Part - II

Answer any seven questions. Q.No. 22 is compulsory. 7x2 = 14

13. State Rayleigh's scatlering law.,
14. Give the function of control rods in a nuclear reactor?
15. What is rust? Give the chemical formula
16. Fill up:
    i) The normal pH of human blood is ———
    ii) Chemical volcano is an example for —— type of reaction.
17. Draw and label the structure of oxysomes.

CII / 10 / Sci / 1

18. **Match the following:**

1. Symplastic pathway	-	leaf
2. Transpiration	-	plasmodesmata
3. Osmosis	-	Pressure in Xylem
4. Root pressure	-	pressure gradient

19. Write the differences between endocrine and exocrine gland.
20. **Identify whether the statements are true or false. correct the false statement.**
    a) A typical Mendelian dihybrid ratio of F_2 generation is 3 : 1
    b) A recessive factor is altered by the presence of a dominant factor.
21. Define Genetic engineering.
22. A torch bulb is rated at 3V and 600mA. Calculate it's power.

PART – III

Answer any seven questions .Q.No: 32 is compulsory. **7x4 = 28**

23. Differentiate mass and weight.
24. a) What is the minimum distance needed for an echo?
    b) Mention two cases in which there is no Doppler effect in sound?
25. Give the salient features of Modern atomic theory.
26. a) What happens when $MgSO_4\ 7H_2O$ is heated? Write the appropriate equation.
    b) Define solubility.
27. Write the characteristics of honco logous series.
28. List the parasitic adaptations in Leech.
29. Classify neurons based on its structure.
30. a) What will happen if you cut planaria into small fragments?
    b) Name the secondary sex organs in male.
31. Write the importance of ethnobotany.
32. Calculate the pH of 1 x 10^{-4} molar solution of NaOH.

PART- IV

Answer all the questions in detail. **7x3=21**

33. a) Explain the construction and working of a compound microscope.

(OR)

    b) i) What is the role of the earthwire in domestic circuits?
    ii) List the merits of LED bulb [any four]
34. a) Derive the relation ship between relative molecular mass and vapour density.

(OR)

    b) Write notes on various factors affecting solubility.
35. a) i) Enumerate the functions of blood.
    ii) How are the arteries and veins structurally different from one another?

(OR)

    b) i) Write the physiological effects of gibberellins.
    ii) What is the role of parathormone?

CH / 10 / Sci / 2

10 R Erode

Reg. No. | | | | | | | |

Time : 2.30 hrs.

Half-Yearly Examination - 2022
SCIENCE

Max. Marks : 75

PART - I

I. Choose the correct answer **5 x 1 = 5**

1. The eye defect 'presbyopia' can be corrected by
   a) convex lens b) concave lens c) convex mirror d) bifocal lens.
2. SI unit of resistance is.....
   a) mho b) joule c) ohm d) ohm meter
3. .....aprons are used to protect us from gamma radiations.
   a) Lead oxide b) Iron c) Lead d) Aluminium
4. 1 mole of any substance contains.....molecules.
   a) 6.023×10^{23} b) 6.023×10^{-23} c) 3.0115×10^{23} d) 12.046×10^{23}
5. Which of the following is the universal solvent?
   a) Acetone b) Benzene c) Water d) Alcohol
6. Which one of the following is used to cure wound?
   a) Hydrochloric acid b) Hydrogen peroxide c) Ammonium chloride d) All the above
7. .....is ATP factory of the cells.
   a) chloroplast b) cytoplasm c) mitochondria d) nucleus
8. Water which is absorbed by roots is transported to aerial parts of the plant through
   a) cortex b) epidermis c) phloem d) xylem
9. The hormone which has positive effect on apical dominance is
   a) cytokinin b) auxin d) gibberellin d) ethylene
10. The best way of direct dating fossils of recent origin is by
    a) radio carbon method b) uranium lead method c) potassium - argon method d) both (a) and (b)
11. Excessive consumption of alcohol leads to
    a) loss of memory b) cirrhosis of liver c) state of hallucination d) supression of brain function
12. All files are stored in.....
    a) folder b) box c) pai d) scanner

PART - II

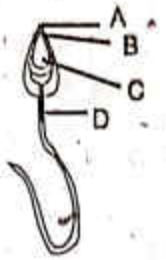
II. Answer any 7 of the following. (Question number 22 is compulsory) **7 x 2 = 14**

13. Why a spanner with a long handle is preferred to tighten screws in heavy vehicles?
14. State Boyle's law.
15. True or false (If false give the correct statement)
    a) Ionic radius increases across the period from left to right.
    b) In a solution the component which is present in lesser amount is called solvent.
16. Fill in the blanks.
    a) The chemical name of rust is,..... b) 100% pure ethonol is called.....
17. Ordinary soap cannot be used in hard water. Why?
18. Match the following.

1. Brain	-	a) pleura
2. Kidney	-	b) capsule
3. Heart	-	c) meninges

4. Lungs : d) Pericardium

19. Draw the label the parts of sperm cell.



20. Name the types of stem cells.
21. What are the advantages of practising exercise in daily life?
22. Three resistors of resistances 5 ohm, 3 ohm, and 2 ohm are connected in series with 10V battery. Calculate their effective resistance and the current flowing through the circuit.

PART - III

III. Answer any 7 of the following. (Question number 32 is compulsory) **7 x 4 = 28**

23. Differentiate convex lens and concave lens.
24. a) What is meant by electric current. b) An alloy of nickel and chromium is used as the heating element. Why?
25. What is a nuclear reactor? List out the essential parts of a nuclear reactor.
26. a) Identify the bond between H and F in HF molecule.
    b) What property forms the basis of identification?
    c) How does the property vary in periods and in groups?
27. Differentiate reversible and irreversible reaction.
28. a) How does leach suck blood from the host?
    b) How does locomotion takes place in leech?
29. a) Name the gaseous plant hormone. Describe its three different actions in plants.
    b) Which hormone is known as stress hormone in plants? Why?
30. a) Define Palaeontology?
    b) Which organism is considered to be the fossil bird? Why is the bird considered to be a connective link?
31. Enumerate the functions of forest.
32. Calculate the number of moles in a) 27 g of $A\ell$ b) 1.51×10^{23} molecules in $NH_4C\ell$.

PART - IV

Answer all the questions.

33. a) i) State the universal law of gravitation and derive its mathematical expression.
    ii) What are the causes of "Myopia". **(OR)**
    b) i) List the merits of LED.
    ii) Write any three features of Natural and artificial radio activity.
34. a) i) What is rust? Give the equation for formation of rust.
    ii) In what way hygroscopic substances differ from delinquescent substances. **(OR)**
    b) i) List out the factors influencing the rate of a reaction.
    ii) What is called homologous series?
    iii) Give any three of its characteristics.
35. a) i) Name the three basic systems in flowering plants.
    ii) What is transpiration? Give the importance of transpiration. **(OR)**
    b) i) Draw and label the structure of a neuron.
    ii) What precautions can be taken for preventing heart disease?

HALF YEARLY EXAMINATION - 2022

10th - Std. Namakkal **SCIENCE** Reg. No. 1308

Time : 3.00 Hrs. **Marks : 75**

PART - I

12 x 1 = 12

I. Choose the best answer.

1. A convex lens forms a real, diminished point sized image at focus. The the position of the object is at
   a) focus b) infinity c) at 2f d) between f and 2f
2. If a substance is heated or cooled, the change in mass of that substance is
   a) positive b) negative c) zero d) none of the above
3. The sound waves are reflected from an obstacle into the same medium from which they were incident. Which of the following changes.
   a) speed b) frequency c) wavelength d) none of these
4. ..... group contains the member of halogen family
   a) 17th b) 15th c) 18th d) 16th
5. Which of the following is hygroscopic in nature?
   a) ferric chloride b) copper sulphate penta hydrate
   c) silica gel d) none of the above
6. TFM in soaps represents ..... content in soap.
   a) mineral b) vitamin c) fatty acid d) Carbohydrate
7. Dental formula of rabbit = ...
   a) $\frac{1023}{2033}$ b) $\frac{2033}{1023}$ c) $\frac{2023}{1033}$ d) $\frac{2032}{1033}$
8. Heart of heart is called
   a) SA node b) AV node c)Purkinje fibres d) Bundle of His
9. Which one is repeated as Mammary gland ② Pineal gland ③ Pituitary gland ④ Thyroid gland ⑤ Adrenal gland
10. Which type of cancer affects lymph nodes and spleen?
    a) Carcinoma b) Sarcoma c) Leukemia d) Lymphoma
11. Chipko movement is initiated against .....
    a) Electricity generation b) Deforestation
    c) Green Revolution d) Fossil fuels
12. Which is used to build scripts?
    a) Script area b) Block palette c) Stage d) sprite

PART - II

7x2=14

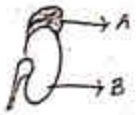
II. Answer any 7 questions. (Question number 22 is compulsory)

13. Differentiate mass and weight.
14. State Rayleigh's law of scattening.
15. Why is tungsten metal used in bulbs, but not in fuse wires?
16. What is rust? Give the equation for formation of rust.

17. Match it :

a) Functional group OH	-	Benzene 5 acetate
b) Heterocyclic	-	Potassium sterabe 4
c) Unsaturated	-	Alcohol 1
d) Soap	-	Furan 2
e) Carbocyclic	-	Ethene 3

18. What is respiratory quotient?
19. Why is the colour of the blood red?
20. What is sprite?
21. Identify the parts A and B in the given figure.



22. 3.5 litres of ethanol is present in 15 litres of aqueous solution of ethanol. Calculate volume precent of ethanol solution.

PART - III

7 x 4 = 28

Answer any 7 questions. : (question number 28 is compulsory)

23. a) State Snell's law.
    b) Why does the sky appear in blue colour?
24. a) What are the factors that affect the speed of sound in gases?
    b) Why does sound travel faster on a rainy day than on a dry day?
25. State Soddy and Fajan's displacement law.
26. a) Identify the bond between H and F-in HF molecule.
    b) What property forms the basis of identification?
    c) How does the property vary in periods and in groups?
27. Differentiate the following a) Monocot root and b) Dicot root
28. The hydroxide ion concentration of a solution is 1×10^{-11} M. What is the pH of the solution?
29. Classify the following compounds based on the pattern of carbon chain and give their structural formula.
    i) Propane ii) Benzene iii) Cyclobutane iv) Furan
30. List out the parasitic adoptations in leech.
31. Why is the sinoatrial node called the pacemaker o heart?
32. a) What isthe importance of rainwater harvesting?
    b) What would happen if the habitat of wild animals is disturbed?

PART - IV

3 x 7 = 21

33. State and prove the law of conservation of linear momentum (or)
    a) State Joule's law of heating.
    b) An alloy of nickel and chromium is used as the heating element why?
    c) How does a fuse wire protect electrical appliances?
34. Derive the relationship between Relative molecular mass and vapour density. (or) The electronic configuration of metal A is 2,8,18,1. The metal A when exposed to air and moisture forms B a green layered compound. A with con. H_2SO_4 forms C and D along with water. D is a gaseous compound. Find A,B,C and D.
35. With a neat labelled diagram describe the parts of a typical angiospermic ovule. (or) Suggest measures to overcome the problems of an alcoholic.

COMMON HALF YEARLY EXAMINATION – 2022

Reg.No. : | | | | | | |

Standard X

Thoothukudi

SCIENCE

Part - I

Time: 3.00 hrs. Marks: 75

I. Choose the correct answer: 12 x 1 = 12

1. Impulse is equal to
   a) rate of change of momentum b) rate of force and time
   c) change of momentum d) rate of change of mass
2. The value of universal gas constant
   a) 3.81 mol^{-1} K^{-1} b) 8.03 mol^{-1} K^{-1} c) 1.38 mol^{-1} K^{-1} d) 8.31 mol^{-1} K^{-1}
3. _____ isotope is used for the treatment of cancer.
   a) radio iodine b) radio cobalt c) radio carbon d) radio nickel
4. The number of periods and groups in the periodic table are _____.
   a) 6,16 b) 7,17 c) 8,18 d) 7,18
5. Which of the following is not an "element + element → compound" type reaction?
   a) $C_{(s)} + O_{2(g)} \rightarrow CO_{2(g)}$ b) $2K_{(s)} + Br_{s(l)} \rightarrow 2KBr_{(s)}$
   c) $2CO_{(g)} + O_{2(g)} \rightarrow 2CO_{2(g)}$ d) $4Fe_{(s)} + 3O_{2(g)} \rightarrow 2Fe_2O_{3(s)}$
6. The secondary suffix used in IUPAC nomenclature of an aldehyde is _____.
   a) –ol b) –oic acid. c) –al d) –one
7. The endarch condition is the characteristic feature of
   a) root b) stem c) leaves d) flower
8. During transpiration there is loss of
   a) carbon dioxide b) oxygen c) water d) None of the above
9. LH is secreted by
   a) adrenal gland b) thyroid gland c) anterior pituitary d) hypothalamus
10. The plant which propagates with the help of its leaves is _____.
    a) onion b) neem c) ginger d) bryophyllum
11. Paleontologists deal with a) Embryological evidence
    b) Fossil evidences c) Vestigial organ evidences d) All the above
12. A renewable source of energy is
    a) petroleum b) coal c) nuclear fuel d) trees

Part - II

II. Answer any 7 questions: (Q.No.22 is compulsory) 7 x 2 = 14

13. True or False. If false, correct it.
    a) Increase in the converging power of eye lens cause "hypermetropia"
    b) The convex lens always gives small virtual image.
14. Match the following :

Component		*Symbol used*
i) Resistor	-	
ii) Variable resistor	-	
iii) Ammeter	-	
iv) voltmeter	-	

15. Explain why, the ceilings of concert halls are curved.
16. Vinu dissolves 50 g of sugar in 250 ml of hot water, Sarath dissolves 50 g of same sugar in 250 ml of cold water. Who will get faster dissolution of sugar? and Why?
17. Fill in the blanks :
    a) A reaction between an acid and a base is called neutral
    b) When Lithium metal is placed in hydrochloric acid hydrogen gas is evolved.
18. Why are the rings of cartilages found trachea of rabbit?
19. ***Assertion and reason type questions.***
    Assertion : Cerebrospinal fluid is present throughout the central nervous system.
    Reason : Cerebrospinal fluid has no such functions
    a) Assertion is correct and reason is wrong
    b) Reason is correct and assertion is wrong
    c) Both assertion and reason are correct
    d) Both assertion and reason are wrong
20. Draw and identify the parts A,B,C and D.

21. What is scratch?
22. How many grams are there in the following :
    a) 2 moles of hydrogen molecule, H_2
    b) 4 moles of phosphorus molecule, P_4

S.Syed Shaban

Part - III

III. Answer any 7 questions: (Q.No.32 is compulsory) **7 x 4 = 28**

23. a) Define inertia. Give its classification.
    b) State Newton's second law.
24. a) State Boyle's law.
    b) If you keep ice at 0°C and water at 0°C in either of your hands, in which hand you will feel more chillness? Why?
25. a) True or False. If false, give the correct statement.
        i) All ores are minerals ; but all minerals cannot be called as ores
        ii) An alloy is a heterogeneous mixture of metals.
    b) State two conditions necessary for rusting of iron.
26. In what way hygroscopic substances differ from deliquescent substances.

27. a) Why does the reaction rate of a reaction increase on raising the temperature?
    b) Define combination reaction. Give one example for an exothermic combination reaction.
28. Differentiate between the aerobic and anaerobic respiration.
29. a) What causes the opening and closing of guard cells of stomata during transpiration?
    b) Who discovered Rh factor? Why was it named so?
30. Why did Mendel selected pea plant for his experiments?
31. a) Name three improved characteristics of wheat that helped India to achieve high productivity.
    b) State the applications of DNA finger printing technique.
32. $_{92}U^{235}$ experiences one α-decay and one β-decay. Find number of neutrons in the final daughter nucleus that is formed.

Part - IV

IV. Answer all the questions: **3 x 7 = 21**

33. a) i) What are the advantages of LED TV over the normal TV? [3]
    ii) List the merits of LED bulb. [4]

(OR)

    b) Compare the properties of alpha, beta and gamma radiations.
34. a) Give the salient features of "Modern atomic theory".

(OR)

    b) How is ethanol manufactured from sugarcane?
35. a) With a neat labelled diagram, describe the parts of a typical angiospermic ovule.

(OR)

    b) i) What are the various routes by which transmission of human immuno deficiency virus takes place? [4]
    ii) Differentiate between Type-1 and Type-2 diabetes mellitus. [3]

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HALF YEARLY EXAMINATION - 2022

Thirupathur

STD - X

SCIENCE

MARKS : 75

TIME : 3.00 Hrs

PART - I

I. **Choose the correct answers :** 12 x 1 = 12

1. The mass of a body is measured on planet Earth as M kg. When it is taken to a planet of radius half that of the Earth then value will be ..... kg a) $4M$ b) $2M$ c) $M/4$ d) M
2. One unit of electric energy is equal to
   a) 1000 watt hour b) 100 watt hour c) 10 watt hour d) all the above
3. ..... aprons are used to protect us from gamma radiation
   a) Lead oxide b) Iron c) Lead d) Aluminium
4. Which of the following represents I amu?
   a) Mass of a C-12 atom b) Mass of a hydrogen atom
   c) 1/12th of the mass of a c-12 atom d) Mass of 0-16 atom
5. ..... is an important metal to form amalgam a) Ag b) Hg c) Mg d) Al
6. Which of the following are used as ananethetics?
   a) Carboxylic acids b) Ethers c) Esters d) Aldehydes
7. Carparian strips are present in the ..... of the root.
   a) Cortese b) pith c) pericycle d) endodermis
8. A patient with blood group `O' was injured in an accident and has blood loss. Which group of blood should be used by doctor for transfusion?
   a) `O' group b) `AB' group c) `A' or `B' group d) All blood group
9. The hormone which has positive effect on opical dominance is
   a) Cytokinin b) Auxin c) Gibberellin d) Ethylene
10. Which method of crop improvement can be practised by a farmer if he is inexperienced?
    a) clonal selection b) mass selection c) pureline selection d) hybridization
11. An inexhaustible resources is / are
    a) wind power b) soil fertility c) wild life d) all the above
12. All files are stored in the ..... a) folder b) box c) paint d) scanner

PART - II

II. **Answer any seven questions. Q.No.22 is compulsory** 7 x 2 = 14

13. State Rayleigh's saw of scattering.
14. What is the role of the earth wire in domestic circuits?
15. Match the following :
    a) Infrasonic - compressions
    b) Echo - 22 KHz
    c) ultrasonic - 10 Hz
    d) High pressure region - Ultrasonography
16. Writes the alloys of stainless steel and its uses?
17. Match the following :
    a) Nissil's granules - Forebrain
    b) Hypothalamus - Peripheral nervous system
    c) Cerebellum - Cyton
    d) Schwann cell - Hind brain

18. Draw and label the structure of a pollen grain.
19. How does insulin deficiency occur?
20. Fill in the blanks :
    a) Chipho movement is initiated against .....
    b) The blood sucking habit of leech is know as .....
21. Why fossil fuels are to be converted?
22. The hydroxyl ion concentration of a solution is 1×10^{-9}M. What is the pOH of the solution?

PART - III

Answer any seven questions. Q.No.32 is compulsory **7 x 4 = 28**

23. Distinguish between linear, arial and super ficial expansion.
24. a) Define one roentgen
    b) Compare any two properties of alpho beta and gamma radiation.
25. Write applications of Avogadra's law?
26. a) Define Hydrated salt
    b) What happens when $MgSo_4.7H_2O$ is heated? Write the appropriate equation?
27. What is called homologous series? Give any three of its characteristic?
28. Name the three basic tissues systems in flowering plants.
29. Differentiate between systole and Diassole. Explain the conduction of heart beat.
30. How a cancer cell differ from a normal cell?
31. What do you understand by the term phenotype and genotype?
32. The ratio of mass of two planets is 2:3 and the ratio of their radil is 4 : 7. Find the ratio of their accelerations due to gravity.

PART - IV

Answer all the questions. Draw diagram whereever necessary **3 x 7 = 21**

33. a) State joule's law of heating?
    b) An alloy of nickel and chromium is used as the heating element. Why?
    c) How does a fuse wire protect electrical appliances? **(OR)**
    a) Compare between Natural and Artificial Radioactivity?
    b) Writes the uses of nuclear reactor?
34. a) Define Relative atomic mass
    b) Give the salient features of "Modern atomic theory" **(OR)**
    a) How does pH play an important role in everyday life?
    b) A solid compound 'A' decomposes on heating into 'B' and a gas 'C', on passing the gas 'C' through water, it becomes acidic. Identify A, B and C.
35. a) i) Write the physiological effects of Gibberellin.
    ii) The degenerated wing of a kiwi is an acquired character. Why is it an acquired character? **(OR)**
    b) i) Enumerate the importance of forest
    ii) If one pollen grain produces two male gametes, how many pollen grains are needed to fertilize 10 ovules?

Kanyakumari District Common Examinations
Common Half Yearly Examination - December 2022

Standard 10

SCIENCE

Time: 3.00 Hrs. Marks: 75

PART - I

Note: Answer all the questions.

Choose the best answer: 12×1=12

1) In which of the following sport the turning effect of force used
   a) swimming b) tennis c) cycling d) hockey
2) Temperature is the average _____ of the molecule of a substance.
   a) difference in K.E and P.E b) sum of P.E and K.E
   c) difference in T.E and P.E d) difference in K.E and T.E
3) Velocity of sound in a gaseous medium is 330 ms^{-1}. If the pressure is increased by 4 times without causing a change in the temperature the velocity of sound in the gas is _____.
   a) 330 ms^{-1} b) 660 ms^{-1} c) 156 ms^{-1} d) 990 ms^{-1}
4) The radio isotope of _____ helps to increase the productivity of crop.
   a) P-32 b) Iodine-131 c) Cobalt-60 d) Na-24
5) The number of periods and groups in the periodic table are _____.
   a) 6, 16 b) 7, 17 c) 8, 18 d) 7, 18
6) Powdered $CaCO_3$ reacts more rapidly than flaky $CaCO_3$ because of _____.
   a) large surface area b) high pressure
   c) high concentration d) high temperature
7) Mass of 1 mole of Nitrogen atom is _____.
   a) 28 amu b) 14 amu c) 28g d) 14g
8) The IUPAC name of an organic compound is 3 - methyl butan - 1 - ol. What type compound it is?
   a) Aldehyde b) Carboxylic acid c) Ketone d) Alcohol
9) During transpiration there is loss of
   a) Carbon di oxide b) Oxygen c) Water d) None of the above
10) The brain is suspended in a special fluid environment called _____.
   a) Cerebrospinal fluid b) Water c) Blood d) Saline water
11) Anemophilous flowers have _____.
   a) Sessile stigma b) Small smooth stigma
   c) Coloured flower d) Large feathery stigma
12) Paleontologists deals with
   a) Embryological evidences b) Fossil evidences
   c) Vestigial organ evidences d) All the above

PART - II

Answer any 7 questions: (Question number 22 is compulsory) 7×2=14

13) Why does an astronaut float in a space shuttle?
14) Distinguish between the resistivity and conductivity of a conductor.
15) State Soddy and Fajan's displacement law.
16) Define Atomicity.
17) A hot saturated solution of copper sulphate forms crystals as it cools. Why?
18) Name the simplest ketone and give its structural formula.
19) Draw and label the structure of oxysomes.
20) Mention the functions of endosperm.

21) Imprints of fossils tell us about evolution. How?

22) A source producing a sound of frequency 90Hz is approaching a stationary listener with a speed equal to (1/10) of the speed of sound? What will be the frequency heard by the listener?

PART - III

Answer any 7 questions: (Question Number 32 is compulsory) **7×4=28**

23) Explain the construction and working of a 'compound microscope'.

24) Compare the properties of alpha, beta and gamma radiations.

25) a) What are the advantages of LED TV over the normal TV?
b) List the merits of LED bulb.

26) Define combination reaction. Give one example for an exothermic combination reaction.

27) What is corrosion? What are the methods of preventing corrosion?

28) $N_2 + 3H_2 \rightarrow 2NH_3$
(The atomic mass of nitrogen is 14, and that of hydrogen is 1)
1 mole of nitrogen (_____g) + 3 moles of hydrogen (_____g) →
2 moles of ammonia (_____g)

29) Why are leucocytes classified as granulo cytes and agranulocytes? Name each cell and mention its functions.

30) With a neat labelled diagram explain the structure of a neuron.

31) Biofertification may help in removing hidden hunger how?

32) What would be expected to happen if
a) Gibberellin is applied to rice seedlings.
b) A rotten fruit gets mixed with unripe fruits.
c) When cytokinin is not added to culture medium.

PART - IV

Answer all the questions: (Draw diagrams wherever necessary) **3×7=21**

33) a) i) What are the types of inertia? Give an example for each type.
ii) List any five properties of light.

(OR)

b) i) Distinguish between ideal gas and real gas.
ii) Why does sound travel faster on a rainy day than on a dry day?
iii) Which material protect us from radiation?

34) a) i) What is aqueous and non aqueous solution given an example?
ii) Explain the mechanism of cleansing action of soap.

(OR)

b) i) What is rust? Give the equation for formation of rust. State two conditions necessary for rusting of iron.
ii) How does pH play an important role in every day life?

35) a) i) How is the circulatory system designed in leech to compensate the heart structure?

(OR)

ii) Why did Mendel selected Pea plant for his experiments?

(OR)

b) i) Men addicted to tobacco lead to oxygen deficiency in their body? What could be the possible reason?
ii) What is e-waste? How are e-waste generated? What are the environmental impact of e-waste?

Ts10S **Tenkasi District Common Examinations**
Common Half Yearly Examination - December 2022

21.12.2022

Standard 10

Time: 3.00 Hrs. **SCIENCE** Marks: 75

PART - I

12×1=12

* **Answer all the questions.**
* **Choose the most appropriate answer from the given four alternatives.**

1) Newton's III law is applicable
   a) for a body is at rest b) for a body in motion
   c) both a and b d) only for bodies with equal masses
2) Speed of light in air or vacuum is _____.
   a) 330 ms^{-1} b) 3×10^{8} ms^{-1} c) 3.48×10^{7} ms^{-1} d) 348 ms^{-1}
3) Kilowatt hour is the unit of
   a) resistivity b) conductivity
   c) electrical energy d) electrical power
4) Velocity of sound in the atmosphere of a planet is 500 ms^{-1}. The minimum distance between the sources of sound and the obstacle to hear the echo, should be
   a) 17m b) 20m c) 25m d) 50m
5) Artificial radioactivity was disovered by
   a) Bequerel b) Irene Curie c) Roentgen d) Neils Bohr
6) In the nucleus of $_{20}Ca^{40}$, there are
   a) 20 protons and 40 neutrons b) 20 protons and 40 neutrons
7) _____ is a relative peroxidic property.
   a) Atomic radii b) Ionic radii
   c) Electron affinity d) Electro negativity
8) The brain of leech lies above the
   a) Mouth b) Buccal cavity c) Pharynx d) Crop
9) The centromere is found at the centre of the _____ chromosome.
   a) Telocentric b) Metacentric c) Sub-metacentric d) Acrocentric
10) The best way of direct dating fossils of recent origin is by
   a) Radio-carbon method b) Uranium lead method
   c) Potassium - argon method d) Both (a) and (c)
11) Tobacco consumption is known to stimulate secretion of adrenaline. The component causing this could be
   a) Nicotine b) Tannic acid c) Curcumin d) Leptin
12) Which software is used to create animation?
   a) Paint b) PDF c) MS word d) Scratch

PART - II

Note: Answer any seven questions. **7×2=14**
[Question No. 22 is compulsory]

13) 'X' rays should not be taken often give the reason.
14) Explain Esterification reaction.
15) Name three improved characteristics of wheat that helped India to achieve high productivity.
16) What precautions can be taken for preventing heart disease?
17) How are e-wastes generated?
18) Write a short note on editor and its main parts.
19) Name two maize hybrids rich in amino acid lysine.
20) Why does the sky appear in blue colour?
21) What is the importance of valves in the heart?
22) Vinu dissolves 50g of sugar in 250ml of hot water, Sarath dissolves 50g of same sugar in 250 ml of cold water. Who will get faster dissolution of sugar? and why?

Ts10S

PART - III

Note: Answer any seven questions. **7×4=28**
[Question No. 32 is compulsory]

23) **Fill in the blanks:**
1) Position is an _____.
2) 100% pure ethanol is called _____.
3) _____ causes stomatal closure.
4) Blood cancer is called _____.

24) **Analogy type questions:**
1) Chemotherapy : Chemicals
Radiation therapy : _____
2) Hyper tension : Hyper cholesterolomia
Glycosuria : _____
3) Nuclear fusion : Extreme temperature
Nuclear fission : _____
4) Increasing crops : Radio phosphorous
Effective functioning of heart : _____

25) **Match:**

a)	Co-60	-	Age of fossil
b)	I-131	-	Function of heart
c)	Na-24	-	Leukemia
d)	C-14	-	Thyroid disease

SIVAKUMAR.M,
Sri Ram Matriculation
Vallam-627809
Tenkasi District.

26) **State whether True or False, if false write the correct statement:**
1) Cancer causing genes are called oncogenes.
2) AIDS is not transmitted by contact with a patient's clothes.
3) On dipping a pH paper in a solution it turns into yellow, then the solution is basic.
4) Nuclear fusion is more dangerous than nuclear fission.

27) Cell phone towers should be placed far away from the residential area. Why?
28) Enumerate the importance of forest.
29) Differentiate between outbreeding and inbreeding.
30) 1) State Ohm's law.
2) What is the role of the earth wire in domestic circuits?
31) Differentiate between Nuclear fission and Nuclear fusion.
32) Three resistors of resistance 5 ohm (5Ω), 3 ohm (3Ω), and 2 ohm (2Ω) are connected in series with 10V battery. Calculate their effective resistance and the current flowing through the circuit.

PART - IV

Note: Answer all the questions. **3×7=21**

33) A) i) Compare the properties of Alpha, Beta, Gamma radiations.
ii) Which material protects as from radiation?

(OR)

B) i) List any five properties of light.
ii) What is refractive index?

34) A) i) What is homologous series? Give any three of its characteristics.
ii) Name the simplest ketone and give its structural formula.

(OR)

B) i) How is ethanol manufactured from sugarcane?
ii) Give any two uses of ethanol.

35) A) What are the sources of solid waste? How are solid wastes managed?

(OR)

B) i) Changes in life style is a risk factor for occurrence of cardiovascular diseases. Can it be modified? If yes suggest measures for prevention.
ii) How does insulin deficiency occur?

V10S

Virudhunagar District Common Examinations
Common Half Yearly Examination - December 2022

Standard 10
SCIENCE

Time: 2.30 Hrs. Maximum Marks: 75

PART - I

Note: i) Answer all questions. **12×1=12**
ii) Choose the most suitable answer.

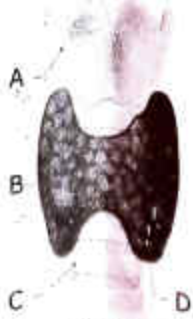
1) The project the rockets which of the following principle(s) is / are required?
   a) Newton's third law of motion
   b) Newton's law of gravitation
   c) Law of conservation of linear momentum
   d) Both a and c
2) Kilowatt hour is the unit of
   a) resistivity b) conductivity
   c) electrical energy d) electrical power
3) Artificial radioactivity was discovered by _____.
   a) Bequerel b) Irene Curie c) Roentgen d) Neils Bohr
4) _____ is an important metal to form amalgam.
   a) Ag b) Hg c) Mg d) Al
5) The number of components in a binary solution is _____.
   a) 2 b) 3 c) 4 d) 5
6) Rectified spirit is an aqueous solution which contains about _____ of ethanol.
   a) 95.5% b) 75.5% c) 55.5% d) 45.5%
7) The endarch condition is the characteristic feature of
   a) root b) stem c) leaves d) flower
8) 'Heart of heart' is called
   a) SA node b) AV node c) Purkinje fibres d) Bundle of His
9) _____ hormone is known as a 'time messenger'.
   a) Oxytocin b) Thyroxine c) Adrenaline d) Melatonin
10) Syngamy results in the formation of _____.
   a) Zoospores b) Conidia
   c) Zygote d) Chlamydospores
11) Vomiting centre is located in
   a) medulla oblongata b) stomach c) cerebrum d) hypothalamus
12) World 'No Tobacco Day' is observed on
   a) May 31 b) June 6 c) April 22 d) October 2

PART - II

Answer any 7 questions: [Q.No. 22 is compulsory] **7×2=14**

13) Draw a ray diagram to show the image formed by a convex lens when the object is placed between F and 2F.
14) State Boyle's law.
15) a) What is the audible range of frequency?
    b) What is the minimum distance needed for an echo?
16) How is ethanoic acid prepared from ethanol? Give the chemical equation.
17) a) Write the dental formula of rabbit.
    b) How is diastema formed in rabbit?

18) Identify the parts A, B, C and D in the given figure.



19) What is the importance of valves in the heart?
20) What are allosomes?
21) How are e-wastes generated?
22) The workdone in moving a charge of 10c across two points in a circuit is 100J. What is the potential difference between the points?

PART - III

Answer any 7 questions: [Q.No. 32 is compulsory] **7×4=28**

23) Describe rocket propulsion.
24) Derive the ideal gas equation.
25) a) Mention two cases in which there is no Doppler effect in sound?
    b) Explain why, the ceilings of concert halls are curved?
26) a) What are the methods of preventing corrosion?
    b) State two conditions necessary for rusting of iron.
27) a) Differentiate Aerobic and Anaerobic respiration.
    b) What is respiratory quotient?
28) Illustrate structure and functions of brain.
29) a) What is bolting? How can it be induced artificially?
    b) Why are thyroid hormones refered as personality hormone?
30) Define Ethnobotany and write its importance.
31) How does rainwater harvesting structures recharge ground water?
32) a) What happens when $MgSO_4.7H_2O$ is heated?
    b) A solution is prepared by dissolving 45g of sugar in 180g of water. Calculate the mass percentage of solute.

PART - IV

Answer ALL questions. Each question carries seven marks: **3×7=21**
[Draw diagram wherever necessary]

33) Explain the construction and working of a 'compound microscope'.

(OR)

a) Compare the properties of alpha, beta and gamma radiations.
b) Define one roentgen.

34) a) Give the salient features of 'Modern Atomic Theory'.
    b) Define Atomicity.
    c) Give any two examples for heterodiatomic molecules.

(OR)

a) Differentiate reversible and irreversible reactions.
b) A solid compound 'A' decomposes on heating into 'B' and a gas 'C'. On passing the gas 'C' through water, it becomes acidic. Identify A, B, C.

35) a) What is transpiration? Give the importance of transpiration.
    b) Enumerate any four functions of blood.

(OR)

a) Give the harmful effects of alcohol.
b) What is metastasis?

Erode

10 R

Reg. No. | | | | | | | |

Time : 2.30 hrs.

Half-Yearly Examination - 2022
SCIENCE

Max. Marks : 75

PART - I

I. Choose the correct answer 5 x 1 = 5

1. The eye defect 'presbyopia' can be corrected by
   a) convex lens b) concave lens c) convex mirror d) bifocal lens
2. SI unit of resistance is.....
   a) mho b) joule c) ohm d) ohm meter
3. .....aprons are used to protect us from gamma radiations.
   a) Lead oxide b) Iron c) Lead d) Aluminium
4. 1 mole of any substance contains.....molecules.
   a) 6.023×10^{23} b) 6.023×10^{-23} c) 3.0115×10^{23} d) 12.046×10^{23}
5. Which of the following is the universal solvent?
   a) Acetone b) Benzene c) Water d) Alcohol
6. Which one of the following is used to cure wound?
   a) Hydrochloric acid b) Hydrogen peroxide c) Ammonium chloride d) All the above
7. .....is ATP factory of the cells.
   a) chloroplast b) cytoplasm c) mitochondria d) nucleus
8. Water which is absorbed by roots is transported to aerial parts of the plant through
   a) cortex b) epidermis c) phloem d) xylem
9. The hormone which has positive effect on apical dominance is
   a) cytokinin b) auxin d) gibberellin d) ethylene
10. The best way of direct dating fossils of recent origin is by
    a) radio carbon method b) uranium lead method c) potassium - argon method d) both (a) and (b)
11. Excessive consumption of alcohol leads to
    a) loss of memory b) cirrhosis of liver c) state of hallucination d) supression of brain function
12. All files are stored in.....
    a) folder b) box c) pai d) scanner

PART - II

II. Answer any 7 of the following. (Question number 22 is compulsory) 7 x 2 = 14

13. Why a spanner with a long handle is preferred to tighten screws in heavy vehicles?
14. State Boyle's law.
15. True or false (If false give the correct statement)
    a) Ionic radius increases across the period from left to right.
    b) In a solution the component which is present in lesser amount is called solvent.
16. Fill in the blanks.
    a) The chemical name of rust is..... b) 100% pure ethonol is called.....
17. Ordinary soap cannot be used in hard water. Why?
18. Match the following.

1. Brain	-	a) pleura
2. Kidney	-	b) capsule
3. Heart	-	c) meninges

4. Lungs - d) Pericardium

19. Draw the label the parts of sperm cell.

20. Name the types of stem cells.
21. What are the advantages of practising exercise in daily life?
22. Three resistors of resistances 5 ohm, 3 ohm, and 2 ohm are connected in series with 10V battery. Calculate their effective resistance and the current flowing through the circuit.

PART - III

III. Answer any 7 of the following. (Question number 32 is compulsory) **7 x 4 = 28**

23. Differentiate convex lens and concave lens.
24. a) What is meant by electric current. b) An alloy of nickel and chromium is used as the heating element. Why?
25. What is a nuclear reactor? List out the essential parts of a nuclear reactor.
26. a) Identify the bond between H and F in HF molecule.
    b) What property forms the basis of identification?
    c) How does the property vary in periods and in groups?
27. Differentiate reversible and irreversible reaction.
28. a) How does leach suck blood from the host?
    b) How does locomotion takes place in leech?
29. a) Name the gaseous plant hormone. Describe its three different actions in plants.
    b) Which hormone is known as stress hormone in plants? Why?
30. a) Define Palaeontology?
    b) Which organism is considered to be the fossil bird? Why is the bird considered to be a connective link?
31. Enumerate the functions of forest.
32. Calculate the number of moles in a) 27 g of $A\ell$ b) 1.51×10^{23} molecules in $NH_4C\ell$.

PART - IV

Answer all the questions.

33. a) i) State the universal law of gravitation and derive its mathematical expression.
    ii) What are the causes of "Myopia". **(OR)**
    b) i) List the merits of LED.
    ii) Write any three features of Natural and artificial radio activity.
34. a) i) What is rust? Give the equation for formation of rust.
    ii) In what way hygroscopic substances differ from delinquescent substances. **(OR)**
    b) i) List out the factors influencing the rate of a reaction.
    ii) What is called homologous series?
    iii) Give any three of its characteristics.
35. a) i) Name the three basic systems in flowering plants.
    ii) What is transpiration? Give the importance of transpiration. **(OR)**
    b) i) Draw and label the structure of a neuron.
    ii) What precautions can be taken for preventing heart disease?

Class : 10 Kallakurichi

Register Number | 1 | 0 | B | 1 | 1 |

COMMON HALF YEARLY EXAMINATION - 2022 - 23

SCIENCE

Time Allowed : 3.00 Hours] [Max. Marks : 75

Instructions: (1) Check the question paper for fairness of printing. If there is any lack of fairness, inform the Hall Supervisor immediately.

(2) Use Black or Blue ink to write and underline and pencil to draw diagrams

Note : This question paper contains four parts

PART – I

Note : (i) Answer all the questions **12x1=12**

(ii) Choose the most appropriate answer from the given four alternatives and write the option code and the corresponding answer

1. To project rockets which principle(s) is / are required?
   a. Newton's third law of motion b. Newton's law of gravitation
   c. Law of conservation of linear momentum d. Both a & c
2. 20 bulbs are connected in series. If one bulb is fused and the remaining 19 bulbs are joined in series and connected to the same power supply, the light in the room will be
   a. increased b. decreased c. remain the same d. decreased much
3. _____ isotope is used in the treatment of cancer
   a. Radio Iodine b. Radio Carbon c. Radio Cobalt d. Radio Nickel
4. _____ group contains the member of halogen family
   a. 17th b. 15th c. 18th d. 16th
5. Deliquescence is due to _____
   a. Strong affinity to water b. Less affinity to water
   c. Strong hatred to water d. Inertness to water
6. Boiling point of Ethanol is _____
   a. 381 K b. 361 K c. 351 K d. 341 K
7. Which is formed during anaerobic respiration?
   a. Carbohydrate b. Ethyl alcohol c. Acetyl co. A d. Pyruvate
8. Which is called 'Heart of heart'?
   a. SA node b. AV node c. Purkinje fibre d. Bundle of His
9. 'Richmond lang effect' is due to _____
   a. Gibberellins b. Cytokinins c. Abscisic acid d. Ethylene
10. Polyphagia is a condition seen in _____
    a. Obesity b. Diabetes mellitus c. Diabetes insipidus d. AIDS
11. Which of the following is / are fossil fuel?
    i) Tar ii) Coal iii) petroleum
    a. i only b. i and ii c. i and iii d. i, ii and iii
12. An object is placed 25 cm from a convex lens whose focal length is 10 cm. The image distance is _____
    a. 50 cm b. 16.66 cm c. 6.66 cm d. 10 cm

PART – II

Note : (i) Answer all the questions. Question number 22 is compulsory. **7x2=14**

13. Define inertia. Give its classifications
14. Mention two cases in which there is no Doppler effect in sound
15. Write any two features of natural and artificial radioactivity
16. What is rust? Give the equation for the formation of rust.
17. **State whether the statement is true or false. If false correct the statement**
    a. Solutions which contain three components are called binary solution.
    b. The molecular formula of green vitriol is $MgSO_4.7H_2O$
18. What is amalgam? Give an example
19. Draw and label the structure of oxysomes.
20. **Fill in the blanks**
    a. Normal blood pressure is _____
    b. The part of human brain which acts as _____
21. What are the various routes by which transmission of human immuno deficiency virus takes place?

KK / 10 / Sci / 1

22. Two bodies have a mass ratio of 3:4 The force applied on the bigger mass produces anacceleration of 12 ms^{-2}.What could be the acceleration of the other body, if the same force acts on it.

PART – III

Note : (i) Answer all the questions. Question number32 is compulsory. **7x4 =28**

23. a) State Boyle's law
    b) The acceleration due to gravity on the surface of the earth will be maximum at _____ and minimum at _____
24. a) What is meant by ultrasonic vibrations?
    b) State any three uses of ultrasonic vibrations
25. a) What are the uses of nuclear reactor?
    b) What is nuclear fusion reaction?
26. a) Give an example each
    i) gas in liquid ii) solid in liquid iii) solid in solid iv) gas in gas
    b) Define combination reaction
27. a) What is an alloy?
    b) What are the reasons for alloying?
28. List out the parasitic adaptations of leech
29. a) What is the importance of valves in heart?
    b) **Match the following**

Column A	Column B
1. Nissil's granules	a. Forebrain
2. Hypothalamus	b. Peripheral nervous system
3. Cerebellum	c. Cyton
4. Schwann cell	d. Hindbrain

30. i) Identify the parts A, B, C and D

    ii) Name two organisms which reproduces through budding.
31. a) How can you determine the age of the fossils?
    b) State the applications of DNA fingerprinting technique
32. An organic compound 'A' is widely used as a preservative and has the molecular formula $C_2H_4O_2$. This compound reacts with ethanol to form a sweet smelling compound 'B'
    a. Identify the compound 'A'
    b. Write the chemical equation for its reaction with 'ethanol to form a sweet smelling compound 'B'
    c. Name the process

PART – IV

Note : (i) Answer all the questions. Draw diagrams wherever necessary **3x7=21**

33. i) a. State Snell's law.
    b. Explain the construction and working of a 'Compound microscope' **(or)**
    ii) a. With the help of a circuit diagram derive the formula for the resultant resistance of three resistances connected a) in series and b) in parallel.
    b. State Ohm's law.
34. i) a. Define atomicity
    b. Derive the relationship between Relative molecular mass and Vapour density. **(or)**
    ii) a. How is ethanol manufactured from sugarcane?
    b. Mention the IUPAC name of this compound

$$CH_3 - \underset{\displaystyle CH_3}{\overset{}{CH}} - CH_2 - OH$$

35. i) a. Name the parts of the hind brain
    b. With a neat labelled diagram explain the structure of a neuron. **(or)**
    ii) a. What are the advantages of using biogas?
    b. Name two maize hybrids rich in amino acid lysine

KK / 10 / Sci / 2

HALF YEARLY EXAMINATION - 2022

STD - X

TIME : 3.00 Hrs

SCIENCE

Thirupur

MARKS : 75

PART - I

I. **Choose the correct answers :** 12 x 1 = 12

1. The mass of a body is measured on planet Earth as M kg. When it is taken to a planet of radius half that of the Earth then value will be ..... kg a) $4M$ b) $2M$ c) $M/4$ d) M
2. One unit of electric energy is equal to
   a) 1000 watt hour b) 100 watt hour c) 10 watt hour d) all the above
3. ..... aprons are used to protect us from gamma radiation
   a) Lead oxide b) Iron c) Lead d) Aluminium
4. Which of the following represents I amu?
   a) Mass of a C-12 atom b) Mass of a hydrogen atom
   c) 1/12th of the mass of a c-12 atom d) Mass of 0-16 atom
5. ..... is an important metal to form amalgam a) Ag b) Hg c) Mg d) Al
6. Which of the following are used as ananethetics?
   a) Carboxylic acids b) Ethers c) Esters d) Aldehydes
7. Carparian strips are present in the ..... of the root.
   a) Cortese b) pith c) pericycle d) endodermis
8. A patient with blood group `O' was injured in an accident and has blood loss. Which group of blood should be used by doctor for transfusion?
   a) `O' group b) `AB' group c) `A' or `B' group d) All blood group
9. The hormone which has positive effect on opical dominance is
   a) Cytokinin b) Auxin c) Gibberellin d) Ethylene
10. Which method of crop improvement can be practised by a farmer if he is inexperienced?
    a) clonal selection b) mass selection c) pureline selection d) hybridization
11. An inexhaustible resources is / are
    a) wind power b) soil fertility c) wild life d) all the above
12. All files are stored in the ..... a) folder b) box c) paint d) scanner

PART - II

II. **Answer any seven questions. Q.No.22 is compulsory** 7 x 2 = 14

13. State Rayleigh's saw of scattering.
14. What is the role of the earth wire in domestic circuits?
15. Match the following :

a) Infrasonic	-	compressions
b) Echo	-	22 KHz
c) ultrasonic	-	10 Hz
d) High pressure region	-	Ultrasonography

16. Writes the alloys of stainless steel and its uses?
17. Match the following :

a) Nissil's granules	-	Forebrain
b) Hypothalamus	-	Peripheral nervous system
c) Cerebellum	-	Cyton
d) Schwann cell	-	Hind brain

18. Draw and label the structure of a pollen grain.
19. How does insulin deficiency occur?
20. Fill in the blanks :
    a) Chipho movement is initiated against .....
    b) The blood sucking habit of leech is know as .....
21. Why fossil fuels are to be converted?
22. The hydroxyl ion concentration of a solution is 1×10^{-9}M. What is the pOH of the solution?

PART - III

Answer any seven questions. Q.No.32 is compulsory **7 x 4 = 28**

23. Distinguish between linear, arial and super ficial expansion.
24. a) Define one roentgen
    b) Compare any two properties of alpho beta and gamma radiation.
25. Write applications of Avogadra's law?
26. a) Define Hydrated salt
    b) What happens when $MgSo_4.7H_2O$ is heated? Write the appropriate equation?
27. What is called homologous series? Give any three of its characteristic?
28. Name the three basic tissues systems in flowering plants.
29. Differentiate between systole and Diassole. Explain the conduction of heart beat.
30. How a cancer cell differ from a normal cell?
31. What do you understand by the term phenotype and genotype?
32. The ratio of mass of two planets is 2:3 and the ratio of their radil is 4 : 7. Find the ratio of their accelerations due to gravity.

PART - IV

Answer all the questions. Draw diagram whereever necessary **3 x 7 = 21**

33. a) State joule's law of heating?
    b) An alloy of nickel and chromium is used as the heating element. Why?
    c) How does a fuse wire protect electrical appliances? **(OR)**
    a) Compare between Natural and Artificial Radioactivity?
    b) Writes the uses of nuclear reactor?
34. a) Define Relative atomic mass
    b) Give the salient features of "Modern atomic theory" **(OR)**
    a) How does pH play an important role in everyday life?
    b) A solid compound 'A' decomposes on heating into 'B' and a gas 'C', on passing the gas 'C' through water, it becomes acidic. Identify A, B and C.
35. a) i) Write the physiological effects of Gibberellin.
    ii) The degenerated wing of a kiwi is an acquired character. Why is it an acquired character? **(OR)**
    b) i) Enumerate the importance of forest
    ii) If one pollen grain produces two male gametes, how many pollen grains are needed to fertilize 10 ovules?

HTv

HALF YEARLY EXAMINATION - 2022

10 - Std

SCIENCE

Time : 3.00 hrs.

Marks : 75

PART - I

Answer all the questions. **12 X 1 = 12**

1. Impulse is equal to
   a) Rate of change of momentum b) Rate of force and time
   c) Change of momentum d) Rate of change of mass
2. Unit of temperature is
   a) Celsius b) Kelvin
   c) Fahrenheit d) None of the above
3. Gamma radiations are dangerous because
   a) it affects eyes b) it affects tissues
   c) it produces genetic disorder
   d) it produces enormous amount of heat
4. Which of the following is a triatomic molecule?
   a) Glucose b) Helium
   c) Carbon di oxide d) Hydrogen
5. Which of the following is a the universal solvent?
   a) Acetone b) Benzene c) Water d) Alcohol
6. ..... is used as anesthetics.
   a) Carboxylic acids b) Ethers
   c) Esters d) Aldehyde
7. Rectified spirit in an aqueous solution which contains about ..... of ethanol.
   a) 95.5% b) 75.5% c) 55.5% d) 45.5%
8. The coelomic fluid of beech contains ..... .
   a) lymph b) haemoglobin c) cerobro fluid d) spiral fluid
9. Node of Ranvir is found in ..... .
   a) Muscles b) Axons c) Dendrites d) Cyton
10. The plant which propagates with the help of its leaves is ..... .
    a) Onion b) Neem c) Ginger d) Bryophyllum
11. Which type of cancer affects lymph nodes and spleen?
    a) Carcinoma b) Sarcoma c) Leukemia d) Lymphoma
12. Which software is used to create animation?
    a) Paint b) PDF c) MS Word d) Scratch

PART - II

7 X 2 = 14

Answer any seven questions. Question No. 22 is compulsory.

13. State Boyle's law.
14. Why are traffic signals red in colour?

15. **Match the following.**

1) Electric current	-	Volt
2) Potential difference	-	Ohm meter
3) Specific resistance	-	Watt
4) Electrical power	-	Joule
5) Electrical energy	-	Ampere

16. State true or false. (If false give the correct statement)
Sodium Chloride dissolved in water forms a non-aqueous solution.
17. What is rust? Give the equation for formation of rust.
18. Differentiate reversible and irreversible reactions.
19. Write a short note on mesophyll.
20. Why are thyroid hormones referred as personality hormone?
21. What are allosomes?
22. Calculate the gram molecular mass of the Water.

PART - III **7 X 4 = 28**

Answer any seven questions. Question No. 32 is compulsory.

23. Define inertia. Give its classification.
24. Differentiate convex lens and concave lens.
25. List the merits of LED bulb.
26. Write notes on i) Saturated solution and ii) Unsaturated solution
27. Differentiate soaps and detergents.
28. List out the parasitic adaptations in leech.
29. Write a neat labeled diagram of a neuron.
30. How do you differentiate homologous organs from analogous organs?
31. Enumerate the importance of forest.
32. Calculate the pH of 0.001 molar solution of HCl.

PART - IV

Answer all the questions. **3 X 7 = 21**

33. State and prove the law of conservation of linear momentum. ***(OR)***
Differentiate the eye defects : Myopia and Hydpermetropia.
34. How does PH play an important role in every day life? ***(OR)***
How is ethanol manufactured from sugarcane?
35. Where are estrogens produced? What is the role of estrogens in the human body? ***(OR)***
Discuss the importance of biotechnology in the field of medicine.

COMMON HALF YEARLY EXAMINATION – 2022

Standard X Reg No : 1 0 0 1 4

SCIENCE

Time: 3.00 hrs. **Part - I** **Marks: 75**

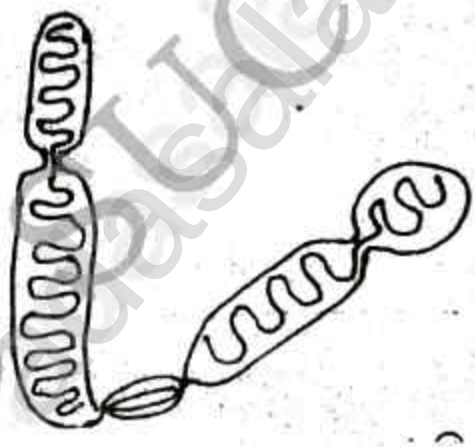
I. Choose the correct answer: **12 x 1 = 12**

1. The mass of a body is measured m planet Earth as 2 M kg. When it is taken to a planet of radius half that of the Earth then its value will be _____ kg.
   a) 4 M b) 2 M c) M/4 d) M
2. The velocity of sound in air at a particular temperature is 330 ms^{-1}. What will be its value when temperature is doubled and the pressure is halved?
   a) 330 ms^{-1} b) 165 ms^{-1} c) $330 \times \sqrt{2}$ ms^{-1} d) $320/\sqrt{2}$ ms^{-1}
3. The gram molecular mass of water molecule is
   a) 16 g b) 18 g c) 32 g d) 17 g
4. Chemical formula of Rust is _____.
   a) $FeO \times H_2O$ b) $FeO_4 \times H_2O$ c) $Fe_2O_3 \times H_2O$ d) FeO
5. The general molecular formula of alkynes is _____.
   a) C_nH_{2n} b) $C_nH_{2n\times2}$ c) C_nH_{2n-2} d) C_nH_{2n+1}
6. Kreb's cycle takes place in
   a) chloroplast b) mitochondria matrix
   c) stomata d) inner mitochondrial membrane
7. The animals which give birth of young ones are
   a) oviparous b) viviparous c) ovoviviparous d) all the above
8. Which one of the following shows correct composition of blood?
   a) plasma - blood + lymphocyte b) serum – blood + fibrinogen
   c) lymph – plasma + RBC + WBC
   d) blood – plasma + RBC + WBC + platelets
9. Which one of the following hormones is naturally not found in plants?
   a) 2, 4–D b) GA3 c) gibberellin d) IAA
10. The number of chromosomes found in human beings are _____.
    a) 22 pairs of autosomes and one pair of allosomes
    b) 22 autosomes 1 allosomes
    c) 46 autosomes
    d) 46 pairs autosomes and 1 pair of allosomes
11. In a hexaploid wheat (2n = 6X = 42) the haploid (n) and basic (X) number of chromosomes respectively are
    a) n = 7 and x = 21 b) n = 21 and X = 21
    c) n = 7 and X = 7 d) n = 21 and X = 7
12. An inexhaustible resources is
    a) wind power b) soil fertility c) wild life d) all the above

Part - II

II. Answer any 22 questions. (Q.No.22 is compulsory) **7 x 2 = 14**

13. Why does the sky appear in blue colour?
14. Match the following :
    a) Fuel - Lead
    b) Moderator - Heavy water
    c) control rods - Cadmium rods
    d) Shield - Uranium
15. What is rust? Give the equation for formation of rust.
16. i) Solubility is the amount of solute dissolved in _____ g of solvent.
    ii) The value of ionic product of water at 25°C is _____.
17. How is diastema formed in rabbit?
18. Who discovered Rh factor? Why was it named so?
19. What is metastasis?
20. Identify the part A,B,C,D in the given figure.
    A) Telomere
    B) Secondary constraction
    C) primary constraction
    D) Satellite



21. What would happen if the habitat of wild animals is disturbed?
22. Three resistors of resistances 5 ohm, 3 ohm and 2 ohm are connected in series with 10 V battery. Calculate their effective resistance and the current flowing through the circuit.

Part - III

III. Answer any 7 questions. (Q.No.32 is compulsory) **7 x 4 = 28**

23. List any five properties of light.
24. Explain the experiment of measuring the real and apparent expansion of a liquid with a neat diagram.
25. Mention four cases in which there is no Doppler effect in sound?
26. Find the percentage of nitrogen in ammonia.
27. a) What happens when $MgSO_4.7H_2O$ is heated? Write the appropriate equation.
    b) Define solubility.

28. **Assertion and Reasoning :**

a) If both A and R are true and R is correct explanation of A

b) If both A and R are true, but R is not the correct explanation of A

c) A is true but R is false d) both A and R are false

Assertion : Corpus callosum is present in space between the duramater and piamater

Reason : It serves to maintain the constant intracranial pressure

29. Write the physiological effects of gibberelling.

30. What do you understand by the term phenotype and genotype?

31. Differentiate between Type-1 and type-2 diabetes mellitus.

32. Calculate the pH of 1×10^{-4} molar solution of NaOH.

Part - IV

IV. Answer all the questions. ***(Draw diagrams wherever necessary)*** 3 x 7 = 21

33. a) State and Prove the law of conservation of linear momentum.

(OR)

b) What is the nuclear reactor? Explain its essential parts with their functions

34. a) i) Differentiate between hygroscopic substances and deliquescence

ii) How does pH play an important role in everyday life?

(OR)

b) i) Differentiate soaps and detergents.

ii) An organic compound 'A' is widely used as a preservative and has the molecular formula $C_2H_4O_2$. This compound reacts with ethanol to form a sweet smelling compound 'B'. Identify the compound 'A'

35. a) Describe and name three stages of Cellular Respiration that Aerobic Organisms use to obtain energy from Glucose

(OR)

b) (i) Define Ethnobotany and write its importance.

(ii) Write short notes about Biofortification.
